

REMARKS

Reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

Claims 1-7, 14-18, 25, 26, and 28 have been canceled. Claims 8-13, 19-24, 27, and 29-30 are pending.

Amendments

Claim 8 has been amended to clarify the method of the invention. According to claim 8, the invention includes the steps of "measuring a plurality of engine and vehicle operating conditions, determining an engine load status from the measured operating conditions, obtaining a fuel map for optimized fuel consumption for the determined engine load status and adjusting fueling parameters of said fuel system based upon the fuel map." Support for the amendment is found, among other places, at paragraph 24 of the specification.

Claims 10 and 11 were amended for consistency with claim 8.

Claims 12 and 13 were amended to further define the step of obtaining a fuel map of claim 8 as retrieving a fuel map from a storage device in claim 12 and calculating a fuel map in claim 13. Support for these amendments is found at paragraphs 33-36.

Claim 19 has been amended similarly to claim 8 to recite a system including "a plurality of fuel maps each optimized for a different set of engine and vehicle operating conditions including engine load, and a control module for receiving the measurements from the sensing means and determining a current engine load, for selecting one fuel map from said plurality of fuel maps based on said engine load, and for controlling fueling parameters of said fueling system by selecting fueling parameters from said fuel map."

Claims 22 and 24 have been amended to correct grammatical errors.

Claim 27 has been amended to depend from claim 19.

Claim 28 has been amended to depend from claim 13, and for consistency with base claim 8.

Claim 30 has been amended for consistency with claim 8.

Response to the Rejection

Claims 1-30 were rejected under 35 USC § 102(b) as being anticipated by four patent documents: US Patents No. 4,729,354 to Tominaga et al.; No. 5,826,563 to Patel et al.; No. 6,340,014 to Tomita et al.; and, No. 6,705,278 to McGee et al.

The cited patents disclose various electronic control devices for engine fueling. None, however, discloses a system or method that determines engine load, obtains a fuel map optimized for fuel consumption at the determined engine load, and controls the engine using the obtained fuel map.

The Tominaga patent discloses a fuel injection control to avoid "bucking" of the vehicle, by detecting low rotation speed and a deceleration of the engine and increasing a rate of fuel supply to stabilize combustion.

The Patel patent discloses a system for controlling a low horsepower, "low idle" mode of operation by controlling the fueling and combustion in individual cylinders. During low idle, certain cylinders are skipped, but the system avoids excessive exhaust emissions. The Patel patent discusses fuel efficiency, but does not disclose a monitoring engine load and selecting a fuel map for optimized fuel consumption.

The Tomita patent discloses a system for controlling direct fuel injection spark ignition for facilitating rapid heating of a catalytic converter device after engine start up.

The McGee patent discloses a fuel control system that provides characteristic injection shape based on engine operating parameters, changing from a split injection mode to a boot shaped mode when an acceleration event is sensed. The injection shapes are stated to be advantageous to meeting emissions standards for the given engine operating condition.

The present invention, by contrast, monitors engine conditions to determine an engine load status, and obtains a fuel map for optimized fuel consumption for the determined engine load. The method and system of the invention controls fueling parameters for optimized fuel consumption at the determined engine load.

Claims 8 and 19 are therefore patentable over the cited art.

Claims 9-13, 29 and 30 depend from claim 8 and are allowable at least as depending from an allowable base claim.

Claims 20-24 and 27 depend from claim 19 and are allowable at least as depending from an allowable base claim.

The Examiner is invited to telephone the undersigned if there are any questions about this response or if a telephone call would be helpful to resolving any outstanding issues.

Respectfully submitted,

A handwritten signature in black ink that reads "Martin Farrell". The signature is written in a cursive, flowing style.

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